Golfers and UV exposures: An application of miniaturised polysulphone dosimetry

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Miniaturised ultraviolet (UV) dosimeters have been manufactured from polysulphone film adhered to lightweight cardboard frames measuring 15 mm by 10 mm with a clear circular aperture of 6 mm. The polysulphone film cast to a thickness of 40 μm was calibrated to the erythemally effective ultraviolet measured by a scanning spectroradiometer (Bentham Instruments, Reading UK) located at the University of Southern Queensland Toowoomba campus. The small, flexible miniaturised UV dosimeters were attached to the vertex, forearm and upper back of golfers and office workers during a series of 9-hole golf rounds run between February through to July 2008. The calibrated erythemally effective UV exposures were compared between the office workers and golf players. Results are presented for the golfers and office workers measured over varying solar zenith angles and weather conditions. The UV exposures of both groups measured in the period are further compared to recommended thresholds of UV for daily occupational exposure and for healthy vitamin D_3 synthesis.